The Listing of Claims:

1. (Currently Amended) A method of producing a bio-diesel oil [[by]] comprising transesterifying oil/fat with alcohol in a ~~presence of~~ reaction mixture comprising an alkyl ester,

wherein the alkyl ester is created as a product of the reaction mixture and is refluxed back to the reaction mixture to function as a subsidiary solvent that promotes homogenous mixing of the reaction mixture.

2. (Canceled).

3. (Original) The method as set forth in claim 1, wherein the alkyl ester is added to the oil/fat and alcohol in an amount of 1 to 30 % based on a weight of the oil/fat.

4. (Original) The method as set forth in claim 1, wherein the oil/fat is selected from the group consisting of vegetable oil/fat, animal oil/fat, waste frying oil, regenerated oil/fat, and a mixture thereof.

5. (Original) The method as set forth in claim 1, wherein the alcohol is selected from the group consisting of C1 to C10 alcohols, and a mixture thereof.

6. (Original) The method as set forth in claim 1, wherein the oil/fat reacts with the alcohol in a molar ratio of 1: 3 to 1: 12.

7. (Original) The method as set forth in claim 1, wherein the oil/fat reacts with the alcohol in a presence of a basic catalyst or an acidic catalyst.

8. (Original) The method as set forth in claim 7, wherein the basic catalyst or the acidic catalyst is a homogeneous catalyst, and is added to the oil/fat and alcohol in an amount of 0.3 to 2.0 % based on a weight of the oil/fat.

9. (Original) The method as set forth in claim 7, wherein the basic catalyst or the acidic catalyst is a heterogeneous catalyst, and is added to the oil/fat and alcohol in an amount of 5 to 80 % based on a volume of a reactor.

10. (Original) The method as set forth in claim 1, wherein the oil/fat reacts with the alcohol in a batch reactor, a plug flow reactor, or a continuous stirred tank reactor, and when a plurality of reactors are used to react the oil/fat with the alcohol, the reactors are arranged in series, in parallel, or in combination of series and parallel.

11. (Currently Amended) A method of producing a bio-diesel oil, comprising: (a) pre-esterifying a free fatty acid, contained in oil/fat, with an alcohol in [[a]] the presence of an acidic catalyst to create a reaction mixture comprising an alkyl ester; and (b) transesterifying ~~the pre-esterified oil/fat and alcohol in alkyl ester~~ the reaction mixture to create a product comprising the alkyl ester,

wherein the alkyl ester is refluxed back to the reaction mixture to function as a subsidiary solvent that promotes homogenous mixing of the reaction mixture.

12. (Original) The method as set forth in claim 11, wherein the step (a) further comprises adding alkyl ester as a product to the reactants.

13. (Canceled)

14. (Original) The method as set forth in claim 11 or 12, wherein the alkyl ester of the step (a) or/and the step (b) is added to the reactants in an amount of 1 to 30 % based on a weight of the oil/fat.

15. (Original) The method as set forth in claim 11, wherein the oil/fat of the step (a) is selected from the group consisting of vegetable oil/fat, animal oil/fat, waste frying oil, and regenerated oil/fat, containing the free fatty acid.

16. (Original) The method as set forth in claim 11, wherein the alcohol of the step (a) and the step (b) is selected from the group consisting of C1 to C10 alcohols, and a mixture thereof.

17. (Original) The method as set forth in claim 11, wherein the oil/fat containing the free fatty acid reacts with the alcohol in a molar ratio of 1:0.3 to 1:3 in the step (a), and the oil/fat reacts with the alcohol in a molar ratio of 1:3 to 1:12 in the step (b).

18. (Original) The method as set forth in claim 11, wherein the step (b) is conducted in a presence of a basic catalyst or the acidic catalyst.

19. (Original) The method as set forth in claim 18, wherein the basic catalyst or acidic catalyst is a homogeneous catalyst, and is added to reactants in an amount of 0.3 to 2.0 % based on a weight of oil/fat.

20. (Original) The method as set forth in claim 18, wherein the basic catalyst or acidic catalyst is a heterogeneous catalyst, and is added to reactants in an amount of 5 to 80 % based on a volume of a reactor.

21. (Original) The method as set forth in claim 11, wherein the step (a) and the step (b) are conducted in a batch reactor, a plug flow reactor, or a continuous stirred tank reactor, and when a plurality of reactors are used to conduct the step (a) and the step (b), the reactors are arranged in series, in parallel, or in combination of series and parallel.

22. (New) A method of producing a bio-diesel oil, comprising:

reacting a non-polar oil/fat selected from the group consisting of vegetable oil/fat, animal oil/fat, waste frying oil, regenerated oil/fat, and mixtures thereof, with a polar alcohol having from 1 to 10 carbons to create a reaction mixture that produces a reaction product, wherein the reaction product comprises a fatty acid alkyl ester consisting of the structure R_1COOR, wherein R and R_1 are independently selected, R is an alkyl group having from 1 to 10 carbons, and the structure R_1COOR has from 10 to 24 carbons; and,

refluxing the fatty acid alkyl ester back to the reaction mixture, wherein the fatty acid alkyl ester composes 1% to 30% of the reaction mixture based on the weight of the non-polar oil/fat;

wherein,

the non-polar oil/fat and the polar alcohol are immiscible with each other in the reaction mixture in the absence of the fatty acid alkyl ester;

the fatty acid alkyl ester functions to promote the formation of a homogeneous mixture of the non-polar oil/fat with a polar alcohol in the reaction mixture in the absence of an agitator;

the reacting of the non-polar oil/fat with the polar alcohol occurs at a higher rate of reaction in the presence of the refluxing than in the absence of the refluxing; and,

the fatty acid alkyl ester does not have to be separated from the product after completion of the reaction.

23. (New) The method of claim 22, wherein the non-polar oil/fat comprises a component selected from the group consisting of soybean oil, palm oil, corn oil, rapeseed oil, linseed oil, sunflower oil, poppy-seed oil, walnut oil, peanut oil, cottonseed oil, rice bran oil, camellia oil, castor oil, and olive oil.

24. (New) The method of claim 22, wherein the non-polar oil/fat is soybean oil.

25. (New) The method of claim 22, wherein the non-polar oil/fat is waste palm oil.

26. (New) The method of claim 22, wherein the non-polar oil/fat is rapeseed oil.

27. (New) The method of claim 22, wherein the non-polar oil/fat comprises a component selected from the group consisting of beef tallow, lard, sheep oil, fish oil, and whale oil.

28. (New) The method of claim 22, wherein the polar alcohol comprises a component selected from the group consisting of methyl alcohol, ethyl alcohol, propyl alcohol, butyl alcohol, and pentyl alcohol.

29. (New) The method of claim 22, wherein the polar alcohol is methyl alcohol.

30. (New) The method of claim 22, wherein the reaction mixture further comprises a homogenous or heterogeneous acid catalyst.

31. (New) The method of claim 22, wherein the reaction mixture further comprises a homogenous or heterogeneous basic catalyst.

32. (New) The method of claim 22, wherein the reaction mixture produces a higher yield in the presence of the refluxing than in the absence of the refluxing.

33. (New) The method of claim 22, wherein the reacting occurs in a continuous stirred tank reactor.

34. (New) The method of claim 22, wherein the reacting occurs in a plug flow reactor.